

ABSTRACT OF THE DISCLOSURE

An apparatus for optically generating signals comprises a mode-locked optical radiation source that generates mode-locked optical radiation with emitted modes separated by approximately 10 to approximately 300 GHz. Coupled to the optical radiation source is an optical demultiplexer with a demultiplexer input, a first demultiplexer output, and a second demultiplexer output, the demultiplexer input being coupled to said mode-locked radiation source. Additionally, the apparatus comprises an optical modulator having a modulator input and a modulator output, the modulator input being coupled to the first demultiplexer output, and an optical multiplexer having a first multiplexer input, a second multiplexer input, and a multiplexer output, the first multiplexer-input being coupled to the modulator output, the second multiplexer input being coupled to said second demultiplexer output.

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